SONY

3-810-725-**51** (1)

FM/AM Cassette Car Stereo

Operating Instructions EN

Owner's Record

The model and serial numbers are located on the bottom of the unit.
Record the serial number in the space provided below.
Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. XR-3500MK2 Serial No. _____

For installation and connections, see the supplied installation/connections manual.

XR-3500MK2

© 1995 by Sony Corporation

Actual total number:

Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

EN

Features

General

- **Detachable-front panel** enables you to take the front panel away with you when you leave your car (page 4).
- **Caution alarm** will be activated if you turn off the ignition key without removing the front panel from the unit. (If you do not use the power amplifier built into the unit, the caution alarm will not be activated.)
- **Built-in power amplifier (max. output: 20 W × 4 ch)** enables you to enjoy a 4-speaker system.
- **Digital 12-hour clock** provided (page 5).

Cassette player section

- **ATA (Automatic Tuner Activation)** for automatically turning on the tuner while fast-forwarding or rewinding a tape (page 6).

Tuner section

- Up to 30 stations can be preset: 18 stations on FM and 12 stations on AM.
- **Automatic Memory function** stores a total of 30 stations in memory quickly and easily (page 7).

Precautions

- If your car is parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.
- If your car is equipped with a power antenna, note that it will be automatically extended while the unit is operating.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

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Sony XR-3500MK2 (E) 3-810-725-**51** (1)

Notes on Cassettes

Cassette care

- Do not touch the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion of the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.
- When the tape is played back for a long period, the cassette shell may become warm because of the built-in power amplifier. This is not a sign of a malfunction.

Notes on Cassette Deck Tape Heads

- Long use of cassette tapes contaminates the tape head causing poor sound quality or complete sound dropout. Therefore, we recommend cleaning the tape head once a month or so with the separately available Sony Cassette Cleaning Set. If the sound does not improve after using a cleaning cassette, please consult your nearest Sony dealer.
- In case of old or inferior cassette tapes, the tape head gets contaminated much more quickly. Depending on the tape, one or two playbacks may cause poor sound.

Cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tend to be stretched easily. Frequent playing and stopping of these tapes may cause them to be pulled into the cassette deck mechanism.

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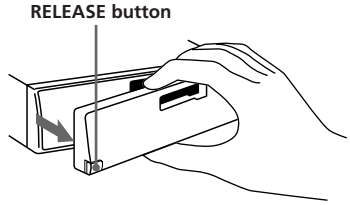
Detaching and Attaching the Front Panel

The front panel of this unit can be detached in order to prevent the unit from being stolen.

Detaching the Front Panel

Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel and detach the panel by pulling it towards you as illustrated.

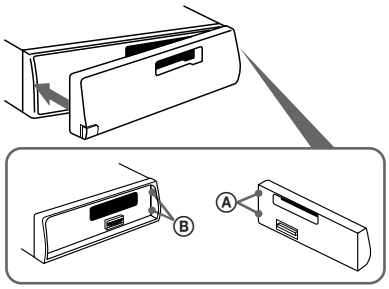


EN

Be sure not to drop the panel after detaching it from the unit.

Attaching the Front Panel

Apply the right side of the front panel to the unit by attaching part Ⓐ of the front panel to part Ⓑ of the unit as illustrated, then swing the left side into the unit until it clicks.



Notes

- *Make sure that the front panel is the right way up when attaching it to the unit as it cannot be attached upside down.*
- *Do not press the front panel hard against the unit when attaching it to the unit. It can easily be attached by pressing it lightly against the unit.*
- *When you carry the front panel with you, put it in the supplied front panel case.*
- *Do not press hard or give excessive pressure to the display windows of the front panel.*
- *Before removing the front panel, be sure to turn the power off. However, if you press the RELEASE button to detach the panel while the unit is still turned on, the power will be automatically turned off in order to protect the speakers from being damaged.*
- *Do not expose the front panel to direct sunlight, heat sources such as hot air ducts or leave it in a humid place. Never leave it on the dashboard etc. of a car parked in direct sunlight where there may be a considerable rise in temperature inside the car.*

Caution alarm

If you turn the ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds.
If you do not use the power amplifier built into the unit, the caution alarm will not be activated.

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Setting the Clock

The clock has a 12-hour digital indication.

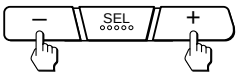
For example, setting it to 10:08

1 Display the time.
(Press the DSPL button during unit operation.)

2 Press the DSPL button for more than two seconds.

The hour digit(s) blinks.

Set the hour digits.

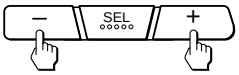


(to go back) (to go forward)

3 Press the SEL button momentarily.

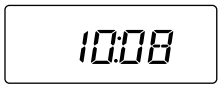
The minute digits blink.

Set the minute digits.



(to go back) (to go forward)

4 Press the DSPL button momentarily.



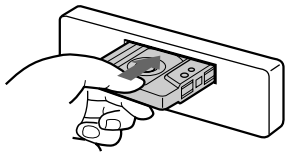
The clock activates.

Note
The clock cannot be set unless the power is turned on. Set the clock after you turn on the radio, or during tape playback.

Cassette Player Operation

Listening to Tape Playback

After inserting the cassette, playback will start automatically.



To change the tape direction,
press both the ◀◀ and the ▶▶ buttons at the same time.

Indication of Tape Transport Direction

The side facing up is being played.

The side facing down is being played.

Tape playback automatically changes direction at the end of the tape.

Note
Before turning off the unit, eject the tape to avoid tape damage.

Ejecting the Cassette

Press the ⏏ button to stop playback and eject the cassette.

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Fast-winding the Tape

Direction indicator*	To advance	To rewind
►		
◄		

To resume playback, press the other fast-winding button partially until the locked button is released.

* *The ◄ or ► indicator will flash while fast-winding the tape.*

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Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the ATA 1 button during playback.
→ "ATA" appears on the display.
When fast-forwarding or rewinding with the ◄◄ or ►► button, the tuner will turn on automatically.

Radio Reception

Searching for Stations Automatically

— Automatic Tuning

1 Select the desired band.

FM1 → FM2 → FM3 →
AM1 → AM2 → FM1

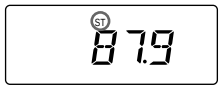
2 Press either side of the SEEK/MANU button momentarily to search for the next station (automatic tuning).

For lower frequencies

For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the SENS button momentarily to get the "LCL" indication.
Only the stations with relatively strong signals will be tuned in. The local seek mode functions only when the automatic tuning is in operation.

If FM Stereo Reception is Poor — Monaural Mode

Press the SENS button momentarily.
→ "MONO" appears on the display.
The sound will improve, but it will become monaural.

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Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band.

FM1 → FM2 → FM3 →
AM1 → AM2 → FM1

2 Press and hold either side of the SEEK/MANU button.
Release the button when the desired station is received.

For lower frequencies

For higher frequencies

PREVENT ACCIDENTS!
When tuning in during driving, use the automatic tuning and the memory preset tuning instead of the manual tuning.

Memorizing Stations Automatically

— Automatic Memory Function

Stations with the clearest reception are automatically searched and memorized on each band. Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of band frequency.

1 Select the desired band.

FM1 → FM2 → FM3 →
AM1 → AM2 → FM1

2 Press the TUNER/A.MEM button for more than two seconds.

The unit will be start scanning the selected band and memorize the tuned stations on the preset number button 1 through 6 automatically.

Memorizing Only the Desired Stations

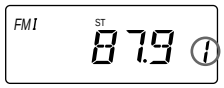
1 Select the desired band.

FM1 → FM2 → FM3 →
AM1 → AM2 → FM1

2 Tune in the station which you wish to store on the preset number button.

3 Press and hold the desired preset number button (ATA 1 to 6) for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears in the display window.



Up to 6 stations on each band (FM1, FM2, FM3 and AM1, AM2) can be stored on the preset number buttons in the order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

1 Select the desired band.

FM1 → FM2 → FM3 →
AM1 → AM2 → FM1

2 Press momentarily the preset number button on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

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Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the SEL button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the − or + button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

EN

Enjoying Bass and Treble at Low Volume

— Loudness Function

Press the LOUD button. → "LOUD" will appear on the display.
Bass and treble will be boosted. To cancel, press again.

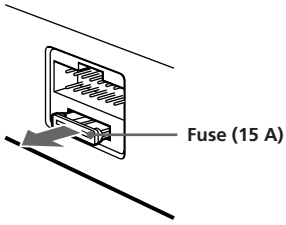
Muting the Beep Tone

Press the 5 button while pressing the SEL button.
To reactivate the beep tone, press these buttons once more.

Maintenance

Fuse Replacement

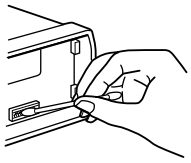
When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.



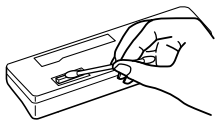
Warning
Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, open the front panel by pressing the RELEASE button, then detach it and clean with a cotton swab dipped in alcohol. Do not apply too much force. Otherwise, the connector may get damaged.



Main unit



Back of the front panel

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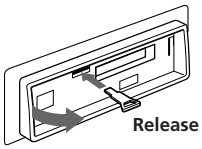
Dismounting the Unit

1



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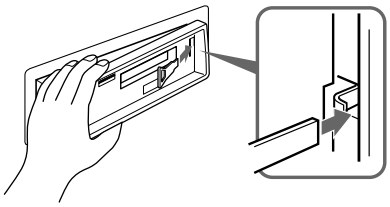

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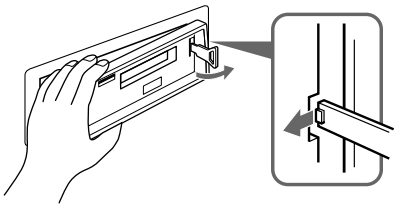

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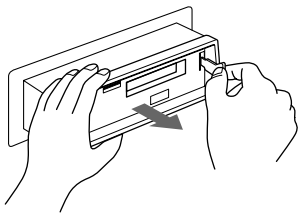

Actual total number:

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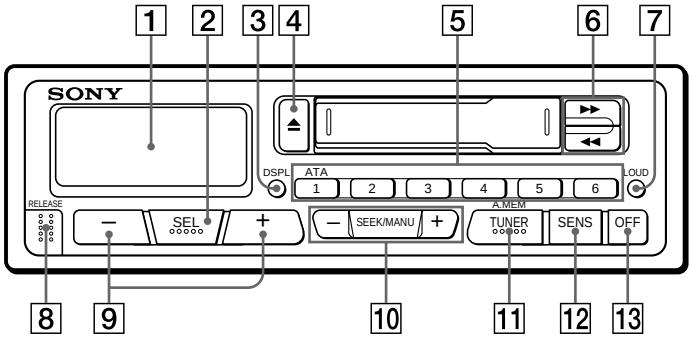
Button Locations



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Refer to the pages in ● for details.

1 **Display window**

2 **SEL (control mode select) button ❺❽**

3 **DSPL (display mode change/time set) button ❺**

4 **⏏ (eject) button ❺**

5 **During radio reception:**
Preset number buttons ❼

During tape playback:
ATA (Automatic Tuner Activation) button ❻

6 **◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons ❺❻**

7 **LOUD (loudness) button ❽**

8 **RELEASE (front panel release) button ❹❽**

9 **(volume/bass/treble/balance/fader control) buttons ❺❽**

10 **SEEK/MANU button ❻❼**

11 **TUNER/A.MEM (radio on • band select/automatic memory) button ❻❼**

12 **SENS (sensitivity adjust) button ❻**

13 **OFF button ❹**

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Specifications

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
7 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 1% total harmonic distortion.

Other Specifications

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.13 % (WRMS)
Frequency response	30 – 15,000 Hz
Signal-to- noise ratio	55 dB

Tuner section

FM

Tuning range	87.5 – 107.9 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	20 W × 4 (at 4 ohms)

General

Output lead	Power amplifier control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 170 mm ($7\frac{3}{8} \times 2\frac{1}{4} \times 6\frac{3}{4}$ in.) (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 155 mm ($7\frac{1}{4} \times 2\frac{1}{8} \times 6\frac{1}{8}$ in.) (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.2 kg (2 lb 10oz.)
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

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Troubleshooting Guide

The following checklist will assist in the correction of most problems which you may encounter with your unit.
Before going through the checklist below, refer to the connection and operating procedures.

General

Problem	Cause/Solution
No sound	• Adjust the volume with the + button. • Set the fader control to the center position for 2-speaker systems.
Indications do not appear in the display window.	Remove the front panel and clean the connectors. See "Cleaning the Connectors" for details.

Tape playback

Problem	Cause/Solution
Playback sound is distorted.	Contamination of the tape head. → Clean the head.

Radio reception

Problem	Cause/Solution
Preset tuning is not possible.	• Memorize the correct frequency. • The broadcast is too weak.
Automatic tuning is not possible.	The broadcast is too weak. → Use the manual tuning.
The "ST" indication flashes.	• Tune in precisely. • The broadcast is too weak. → Press the SENS button to enter the MONO mode.

Sony Corporation Printed in Malaysia

Actual total number: